National Transportation Safety Board
Aviation Accident Final Report

Location:	Fulton, NY	**Accident Number:**	NYC07LA094
Date & Time:	04/14/2007, 1430 EDT	**Registration:**	N45FR
Aircraft:	Romeo Lancair Legacy RG	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot built the airplane, and the accident flight was the airplane's first flight. Shortly after departure, the engine noise began to oscillate, consistent with partial power. The airplane was unable to maintain altitude, and subsequently impacted a wooded area. On-site examination of the wreckage did not reveal any preimpact mechanical malfunctions, and fueling records revealed the airplane was serviced with 30 gallons of 100LL aviation gasoline prior to the engine accumulating approximately 1.2 hours of ground operation. During the initial engine ground run, a fuel leak had originated from a loose fuel return line fitting in the left wing root area, and the pilot repaired the fitting. After the accident, the engine was examined and test-run at the manufacturer's facility. Inspection of the engine driven fuel pump revealed that the mixture lever nut at the fuel pump was loose, and the lever could be moved beyond lean and rich limitations; however, the preimpact position of the mixture lever and mixture lever nut could not be verified. During the test-run, the engine started on the first attempt, and ran without hesitation at different power settings, including idle to full power oscillations.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power during the initial climb after takeoff for undetermined reasons.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: DESCENT - EMERGENCY

Findings
2. OBJECT - TREE(S)

Factual Information

On April 14, 2007, about 1430 eastern daylight time, an amateur-built Lancair Legacy RG, N45FR, was substantially damaged during a forced landing near Fulton, New York, following a loss of engine power while departing Oswego County Airport (FZY), Fulton, New York. The certificated commercial pilot and passenger were fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the local personal flight conducted under 14 CFR Part 91.

According to witnesses, the pilot built the airplane, and the accident flight was the airplane's first flight. Shortly after departing runway 33 at FZY, the engine noise began to oscillate, consistent with partial power or sputtering. The airplane was unable to maintain altitude, and subsequently impacted a wooded area adjacent to a residence.

Examination of the wreckage by a Federal Aviation Administration (FAA) inspector revealed that the airplane came to rest upright. The debris field was limited to a radius of approximately 30 feet, and all of the major components of the airplane were located. The nose of the airplane was partially buried in an impact crater, about 3 feet deep, and the surrounding terrain consisted of soft earth, mud, and standing water.

The outboard one-third of the right wing had separated, as did the outboard one-quarter of the left wing. The fuselage was partially separated aft of the wing spar, and the empennage was also partially detached.

Both ailerons had separated from their respective wings; however, continuity from the push-pull tubes at the aileron locations was established to the control stick in the cockpit. Continuity was also established between the rudder cables in the fuselage, and the rudder bellcrank in the empennage. In addition, continuity was established between the elevator push-pull tubes in the empennage, and the control stick in the cockpit.

The landing gear was in the retracted position. The landing gear selector switch in the cockpit was in the "UP" position. The flight spoilers were in the retracted position. The flaps remained attached to their respective wings, and appeared to be extended approximately 10 degrees.

The throttle control was in the full open position, the mixture control was in the full rich position, and the propeller control was in the low pitch position. The fuel selector valve was in the "OFF" position. First responders at the scene stated that they had moved the fuel selector, ignition, and master switches to "OFF."

There was no evidence of a postcrash fire, and a fuel odor was present at the scene. The engine cowling was removed. The fuel lines to each fuel nozzle were removed, and there was no indication of fuel present. The fuel lines at the fuel manifold were removed, and there was no indication of fuel present, except for a trace amount in the fitting leading to the right rear cylinder. The fuel supply line from the firewall to the fuel manifold was removed, and there was no evidence of fuel present. The gascolator was also removed, and was absent of fuel or contamination. The airplane was equipped with two fuel tanks, one in each wing. Both tanks displayed impact damage, and were compromised.

One of the three propeller blades was visible. The remaining two blades were buried in the mud. The propeller blades were composite construction. The visible blade exhibited some delamination. There were no scratches, gouges, or striations observed on the leading edge or

surfaces of the visible blade.

Shoulder harnesses were installed in the airplane, and according to the first responders; both occupants were wearing seat belts and shoulder harnesses.

Review of fueling records revealed that the airplane was fueled with 30 gallons of 100LL aviation gasoline on March 30, 2007.

According to maintenance records and a Hobbs meter, the engine had approximately 1.2 hours of ground operation prior to the accident flight. A friend of the pilot stated that during the initial engine run, a fuel leak was observed in the cabin, inside and aft of the left wing root. The fuel leak had originated from a loose fuel return line fitting in the left wing root area. The pilot subsequently repaired the fitting.

The engine was examined and test-run at the manufacturer's facility, under the supervision of a National Transportation Safety Board investigator, on July 9 and 10, 2007. The oil pan, oil pick-up tube, exhaust system, alternator, engine driven fuel pump (inlet fitting damaged), and propeller governor were removed due to impact damage.

The fuel manifold valve was removed and inspected. Fuel was present in the valve, and was consistent in odor and color to 100LL aviation gasoline. The diaphragm, fuel screen, and spring were intact, with no contamination noted.

Magneto timing was tested and no discrepancies were noted.

The engine driven fuel pump was disassembled. The vanes and diaphragm were intact, and no contamination was noted in the pump. The mixture lever nut at the fuel pump was loose, and the lever could be moved beyond lean and rich limitations. The preimpact position of the mixture lever and mixture lever nut could not be verified.

The following slave components were installed: oil pan, oil pick-up tube, exhaust stacks, and an engine driven fuel pump. The engine started on the first attempt, and ran without hesitation at different power settings, including idle to full power oscillations. A magneto check at 2100 rpm revealed a 50-rpm drop on the left magneto and a 40-rpm drop on the right magneto.

The primary flight display and multi-function display were forwarded to the Safety Board's Vehicle Recorders Division, Washington, D.C.; however, no data could be recovered.

The reported weather at FZY, at 1454, was: wind from 240 degrees at 7 knots; broken ceiling at 4,100 feet; visibility 10 miles; temperature 6 degrees Celsius (C); dew point -3 degrees C; altimeter 30.03 inches of mercury.

Pilot Information

Certificate:	Commercial	**Age:**	61, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane Single-engine	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With Waivers/Limitations	**Last FAA Medical Exam:**	01/01/2006
Occupational Pilot:		**Last Flight Review or Equivalent:**	01/01/2007
Flight Time:	2768 hours (Total, all aircraft), 2 hours (Total, this make and model), 0 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Romeo	**Registration:**	N45FR
Model/Series:	Lancair Legacy RG	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental	**Serial Number:**	FAR-01
Landing Gear Type:	Retractable - Tricycle	**Seats:**	2
Date/Type of Last Inspection:	04/01/2007, Condition	**Certified Max Gross Wt.:**	2200 lbs
Time Since Last Inspection:	0 Hours	**Engines:**	1 Reciprocating
Airframe Total Time:	1 Hours at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-550-N
Registered Owner:	Air Superiority Inc.	**Rated Power:**	310 hp
Operator:	Frank A. Romeo	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	FZY, 475 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	1454 EDT	**Direction from Accident Site:**	150°
Lowest Cloud Condition:		**Visibility**	10 Miles
Lowest Ceiling:	Broken / 4100 ft agl	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	6°C / -3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Fulton, NY (FZY)	**Type of Flight Plan Filed:**	None
Destination:	(FZY)	**Type of Clearance:**	None
Departure Time:	1430 EDT	**Type of Airspace:**	

Airport Information

Airport:	Oswego County Airport (FZY)	**Runway Surface Type:**	Asphalt
Airport Elevation:	475 ft	**Runway Surface Condition:**	Dry
Runway Used:	33	**IFR Approach:**	None
Runway Length/Width:	5197 ft / 100 ft	**VFR Approach/Landing:**	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	43.350833, -76.388056

Administrative Information

Investigator In Charge (IIC):	Robert J Gretz	**Report Date:**	01/31/2008
Additional Participating Persons:	Marcia Brooks; FAA/FSDO; Rochester, NY Josh Cawthra; Teledyne Continental Motors; Mobile, AL Ken Barto; EAA Chapter 486; Fulton, NY		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		